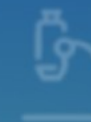
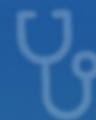




WTR

WORKSHOP
DE TECNOLOGIAS DE REDES DO POP-BA

14 A 18 DE SETEMBRO DE 2020



A importância da conectividade em tempos de pandemia

Thiago Bomfim

PoP-BA/RNP

IX.br - Salvador

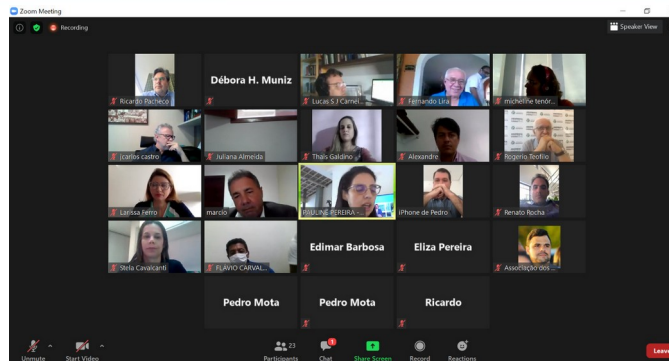


ORGANIZAÇÃO SOCIAL DO MCTI

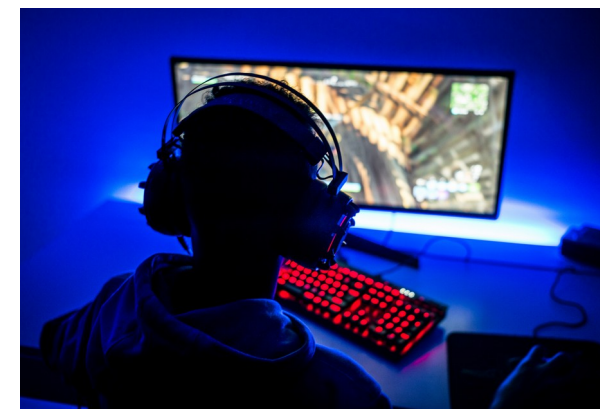
Introdução



Fonte: <https://1h4hf10xz8m3g3kh2w69lc-wpengine.netdna-ssl.com/blog/files/2020/03/home-office-2-1-720x480.jpg>



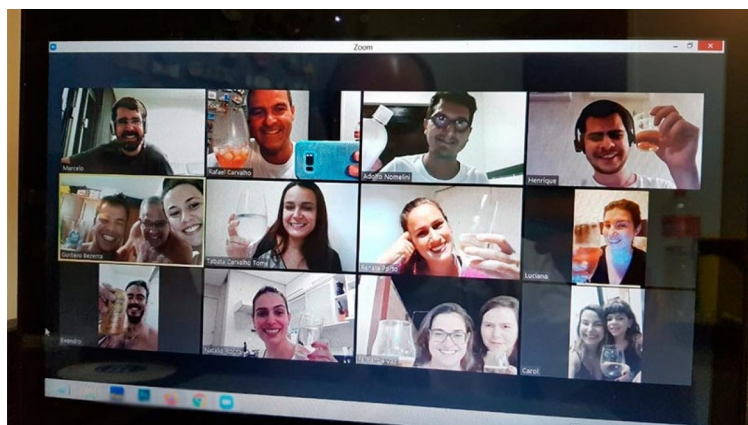
<https://ama-al.com.br/wp-content/uploads/2020/06/WhatsApp-Image-2020-06-10-at-15.09.25.jpeg>



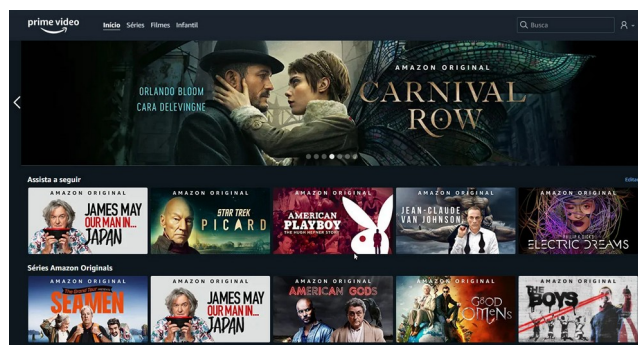
<https://karmainpact.com/wp-content/uploads/2019/11/13863.jpg>



<https://categorianerd.com/netflix-divulga-poster-especial-de-stranger-things/>
<https://categorianerd.com/netflix-divulga-poster-especial-de-stranger-things/>



<https://f0.wp.com/portalbeiradiao.com.br/wp-content/uploads/2020/04/Zoom-02.jpg?fit=1280%2C720&ssl=1>



<https://tecnoblog.net/wp-content/uploads/2020/02/amazon-prime-video.jpg>



Fonte: <https://saudebusiness.com/wp-content/uploads/2019/03/medico-computador-e1550000034653.jpg>
<https://saudebusiness.com/wp-content/uploads/2019/03/medico-computador-e1550000034653.jpg>

- IX.br (“PTT.br”)?
 - Projeto do Comitê Gestor da Internet no Brasil (CGI.br) que promove e cria a infra-estrutura necessária (IXP) para interconexão direta entre as redes (ASs) que compõem a Internet Brasileira.
 - São características fundamentais:
 - Neutralidade - independência de provedores comerciais
 - Qualidade - troca de tráfego eficiente
 - Baixo custo das alternativas, com alta disponibilidade
 - Matriz de troca de tráfego regional única.
 - Maior ponto de troca de tráfego no mundo:
 - Em volume de tráfego trocado;
 - ~13 Tbps;
 - Em número de participantes:
 - >2500 AS;



IX.br – Salvador: informações gerais

- Operação da localidade e abrigo do PIX central

- Ponto de Presença da RNP na Bahia (PoP-BA/RNP)
- Universidade Federal da Bahia (UFBA)
 - Em parceria com NIC.br/CGI.br

- PIXes da localidade:

- UFBA (central)
- TASCOM
- COOMCORP

- Atualmente, com ~90 participantes e outros ~20 em fase de ativação

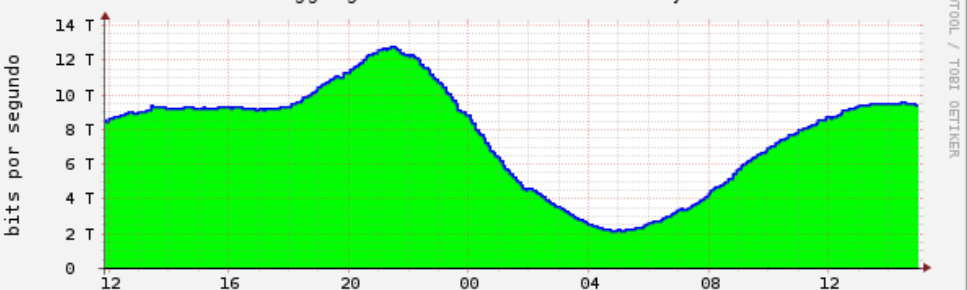
- 2019: ~80 participantes;



IX.br - Salvador						
ASN	NOME	ATM	LD	TRANSITO	IPv6	IPv4
1916	RNP	✓	✓	✓	✓	✓
2549	CENTURYLINK	✓	✓	✓	✓	✓
17198	OI	✓	✓	✓	✓	✓
10904	SERPRO	✓	✓	✓	✓	✓
13335*	CLOUDFLARE	✓	✓	✓	✓	✓
14028	Snet	✓	✓	✓	✓	✓
14840	Commcorp	✓	✓	✓	✓	✓
18713*	ALGANTTELECOMIA	✓	✓	✓	✓	✓
18881	OVH	✓	✓	✓	✓	✓
20144	L-Root - ICANN	✓	✓	✓	✓	✓
29832	Prodeb	✓	✓	✓	✓	✓
29833	Vigtel Telecom	✓	✓	✓	✓	✓
29188	ITB	✓	✓	✓	✓	✓
29209	COMPLUS	✓	✓	✓	✓	✓
29273	NET	✓	✓	✓	✓	✓
52096	JSK TELECOM	✓	✓	✓	✓	✓
52120	Swiretel	✓	✓	✓	✓	✓
52863	UPX	✓	✓	✓	✓	✓
52871	TASCOM	✓	✓	✓	✓	✓
52872	Vivatel	✓	✓	✓	✓	✓
52873	SOFTCOMP	✓	✓	✓	✓	✓
52998	STARTNET	✓	✓	✓	✓	✓
53075	Helios	✓	✓	✓	✓	✓
53067	TELY	✓	✓	✓	✓	✓
53104	UFBA@UFBA	✓	✓	✓	✓	✓
53180	INFORTELECOM	✓	✓	✓	✓	✓
53240	ACESSO.NET	✓	✓	✓	✓	✓
53238	COOL	✓	✓	✓	✓	✓
53242	Telebak	✓	✓	✓	✓	✓
61580	OperCON	✓	✓	✓	✓	✓
61597	GlobalNET	✓	✓	✓	✓	✓
61727	Speedzone	✓	✓	✓	✓	✓
61788	PorteNet	✓	✓	✓	✓	✓
61902	Bahia@Technology	✓	✓	✓	✓	✓
202068	Nexa Telecom	✓	✓	✓	✓	✓
202087	FDN	✓	✓	✓	✓	✓
202713*	LIDERTELECOM	✓	✓	✓	✓	✓
202789	GIGANET	✓	✓	✓	✓	✓
202773	ONDANET	✓	✓	✓	✓	✓
202784	DISTECH	✓	✓	✓	✓	✓
202801	Viva	✓	✓	✓	✓	✓
202843	Lognet	✓	✓	✓	✓	✓
202868	ITNET TELECOM	✓	✓	✓	✓	✓
202969	IVI TELECOM	✓	✓	✓	✓	✓
203903	INF@CIAMIA	✓	✓	✓	✓	✓
203912	PinetTelecom	✓	✓	✓	✓	✓
204304	Sena@natec	✓	✓	✓	✓	✓
204404	NETGOOL	✓	✓	✓	✓	✓
204437	TELEMAC	✓	✓	✓	✓	✓
204479	TURBOZONE	✓	✓	✓	✓	✓
204562	Enlace Telecom	✓	✓	✓	✓	✓
204881	NTG	✓	✓	✓	✓	✓
204906	Pho@netnet	✓	✓	✓	✓	✓
204963*	CONNECTALINK	✓	✓	✓	✓	✓
205019	Nex Telecom	✓	✓	✓	✓	✓
205028	LIBRYDA	✓	✓	✓	✓	✓
205043	GILNET	✓	✓	✓	✓	✓
205077	FLASHNET	✓	✓	✓	✓	✓
205079	PROVEDORLIVE	✓	✓	✓	✓	✓
205442*	VISUALINK	✓	✓	✓	✓	✓
205499	GS TELECOM	✓	✓	✓	✓	✓
205547	INTERADINET	✓	✓	✓	✓	✓
206045	ART@COMPLUS	✓	✓	✓	✓	✓
206095	VANGUARDIA Telecom	✓	✓	✓	✓	✓
206131	LINKABR	✓	✓	✓	✓	✓
206289*	MVTELECOM	✓	✓	✓	✓	✓
206327	Gen@shakes	✓	✓	✓	✓	✓
206345	IBT	✓	✓	✓	✓	✓
206360	Sing@urCDN	✓	✓	✓	✓	✓
206413	Viva Technology	✓	✓	✓	✓	✓
206467	SM TELECOM	✓	✓	✓	✓	✓
206551	CONEX@GUA	✓	✓	✓	✓	✓
206611	NOVA@FONET	✓	✓	✓	✓	✓
207090	H@el@v@r	✓	✓	✓	✓	✓
207209	PIRAMANET	✓	✓	✓	✓	✓
207217	SW@T@N@T	✓	✓	✓	✓	✓
207320	AINET	✓	✓	✓	✓	✓
207399	M@P@R@E@N@E TELECOM	✓	✓	✓	✓	✓
207388	Transnet	✓	✓	✓	✓	✓
207613	Elek@net	✓	✓	✓	✓	✓
207605	ACE@SY	✓	✓	✓	✓	✓
207664	RC@SER@V@C@S	✓	✓	✓	✓	✓
208177	NETGOOL SSR	✓	✓	✓	✓	✓
208234	VALER@net	✓	✓	✓	✓	✓
208298	LINKTECH	✓	✓	✓	✓	✓
208477	PROVEDOR@UN@R@W@B	✓	✓	✓	✓	✓
208510	JS@N@T@R@N@T	✓	✓	✓	✓	✓
208527*	FIBER@F@S@T TELECOM	✓	✓	✓	✓	✓
208539	Viva Telecom	✓	✓	✓	✓	✓
209025	GMAX TELECOM	✓	✓	✓	✓	✓
270293	ION@D@D@S TELECOM	✓	✓	✓	✓	✓

IX.br – Salvador: estatísticas

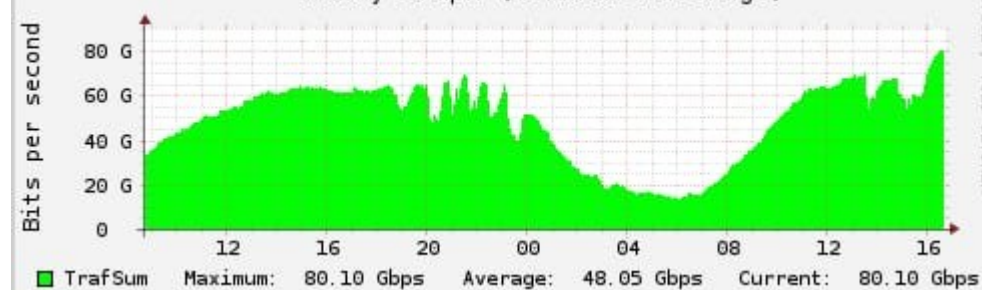
Aggregate traffic IX.br - Daily



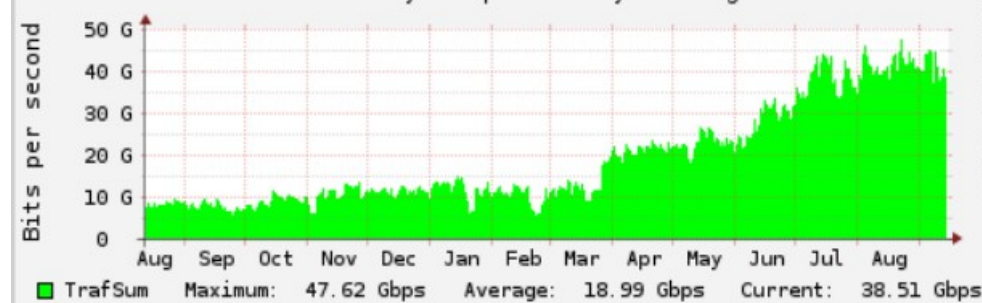
	Max:	Avg:	Current:
TOTAL	12.82 Tbps	7.71 Tbps	9.44 Tbps
saopaulo.sp	9.48 Tbps	5.74 Tbps	6.99 Tbps
riodejaneiro.rj	1.63 Tbps	974.03 Gbps	1.21 Tbps
fortaleza.ce	826.79 Gbps	477.76 Gbps	584.23 Gbps
portoalegre.rs	267.34 Gbps	150.57 Gbps	183.18 Gbps
curitiba.pr	216.02 Gbps	111.63 Gbps	149.01 Gbps
brasilia.df	80.26 Gbps	50.53 Gbps	66.41 Gbps
salvador.ba	70.97 Gbps	41.26 Gbps	51.85 Gbps
lajeado.rs	37.86 Gbps	21.31 Gbps	24.30 Gbps
recife.pe	36.18 Gbps	20.03 Gbps	26.42 Gbps
belohorizonte.mg	38.52 Gbps	17.37 Gbps	20.68 Gbps
londrina.pr	32.05 Gbps	18.59 Gbps	21.19 Gbps
campinas.sp	27.38 Gbps	16.38 Gbps	25.00 Gbps
campinagrande.pb	22.40 Gbps	12.80 Gbps	15.50 Gbps
florianopolis.sc	21.72 Gbps	12.48 Gbps	17.01 Gbps
joao Pessoa.pb	17.69 Gbps	10.74 Gbps	12.70 Gbps
vitoria.es	24.70 Gbps	7.39 Gbps	8.88 Gbps
natal.rn	9.05 Gbps	5.89 Gbps	7.39 Gbps
belem.pa	8.58 Gbps	4.31 Gbps	5.31 Gbps
maceio.al	7.72 Gbps	4.00 Gbps	4.88 Gbps
maringa.pr	6.37 Gbps	3.95 Gbps	4.50 Gbps
manaus.am	4.05 Gbps	2.50 Gbps	2.26 Gbps
saojosecampos.sp	3.08 Gbps	1.75 Gbps	2.12 Gbps
sjoseriopreto.sp	2.54 Gbps	1.62 Gbps	1.75 Gbps
teresina.pi	2.46 Gbps	1.09 Gbps	1.28 Gbps
saoluis.ma	1.08 Gbps	550.53 Mbps	915.06 Mbps
casavel.pr	2.39 Gbps	1.06 Gbps	985.25 Mbps
aracaju.se	1.16 Gbps	699.80 Mbps	847.82 Mbps
cuiaba.mt	2.12 Gbps	560.18 Mbps	786.47 Mbps
caxiasdosul.rs	1.22 Gbps	581.66 Mbps	575.57 Mbps
fozdoiguacu.pr	707.41 Mbps	306.92 Mbps	357.51 Mbps
campgrande.ms	378.37 Mbps	206.59 Mbps	284.02 Mbps
santamaria.rs	19.04 Mbps	4.33 Mbps	19.04 Mbps

Última Atualização: 2020-09-15 15:00

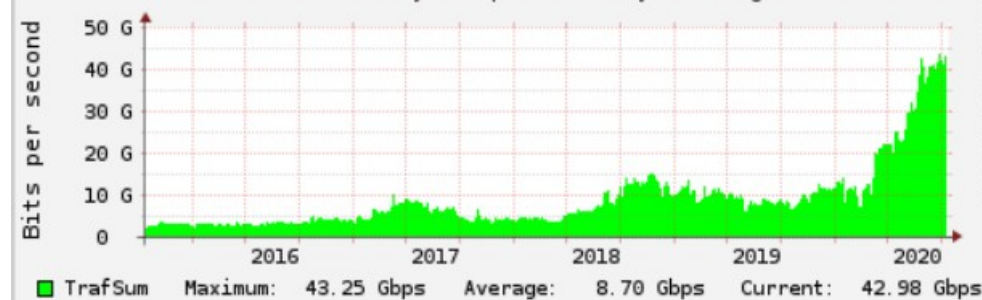
Daily Graph (5 minute average)



Yearly Graph (1 day average)



Decadely Graph (12 day average)

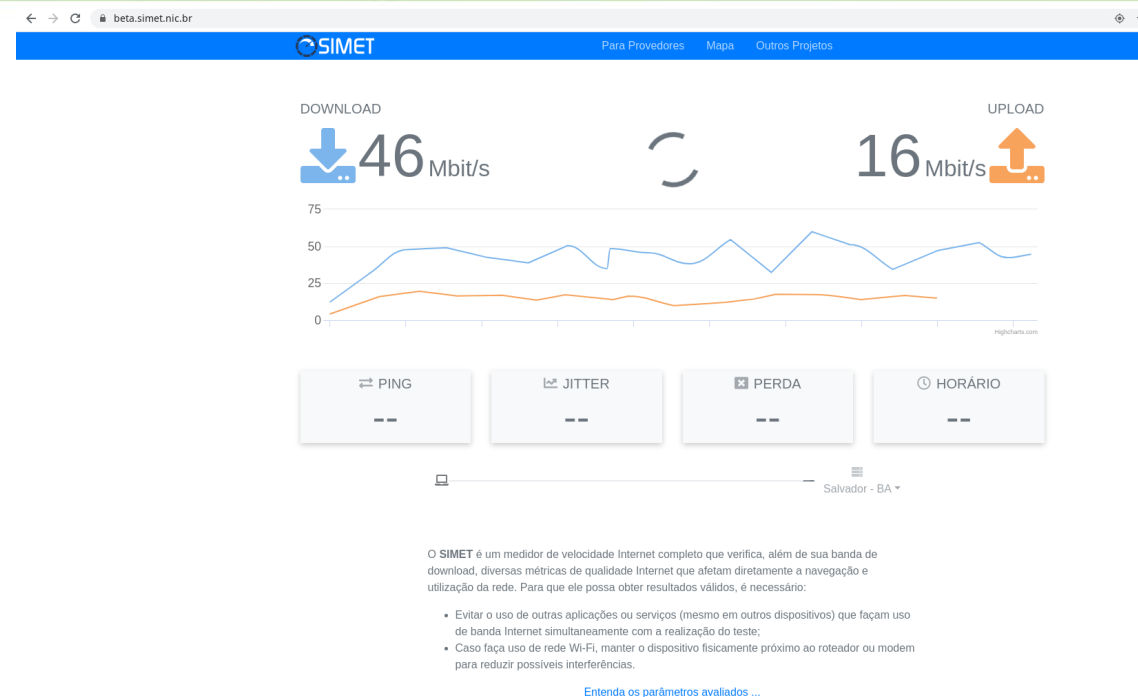


Fonte: IX.br (em 15/09/2020 às 15:03:15)

IX.br – Salvador: serviços e possibilidades



- Acordos bilaterais;
- Compra e venda de transporte para o IX;
- Trânsito no IX;
- SIMET
- B.DNS e L.root
- Oferta de conexões para UFBA e RNP;

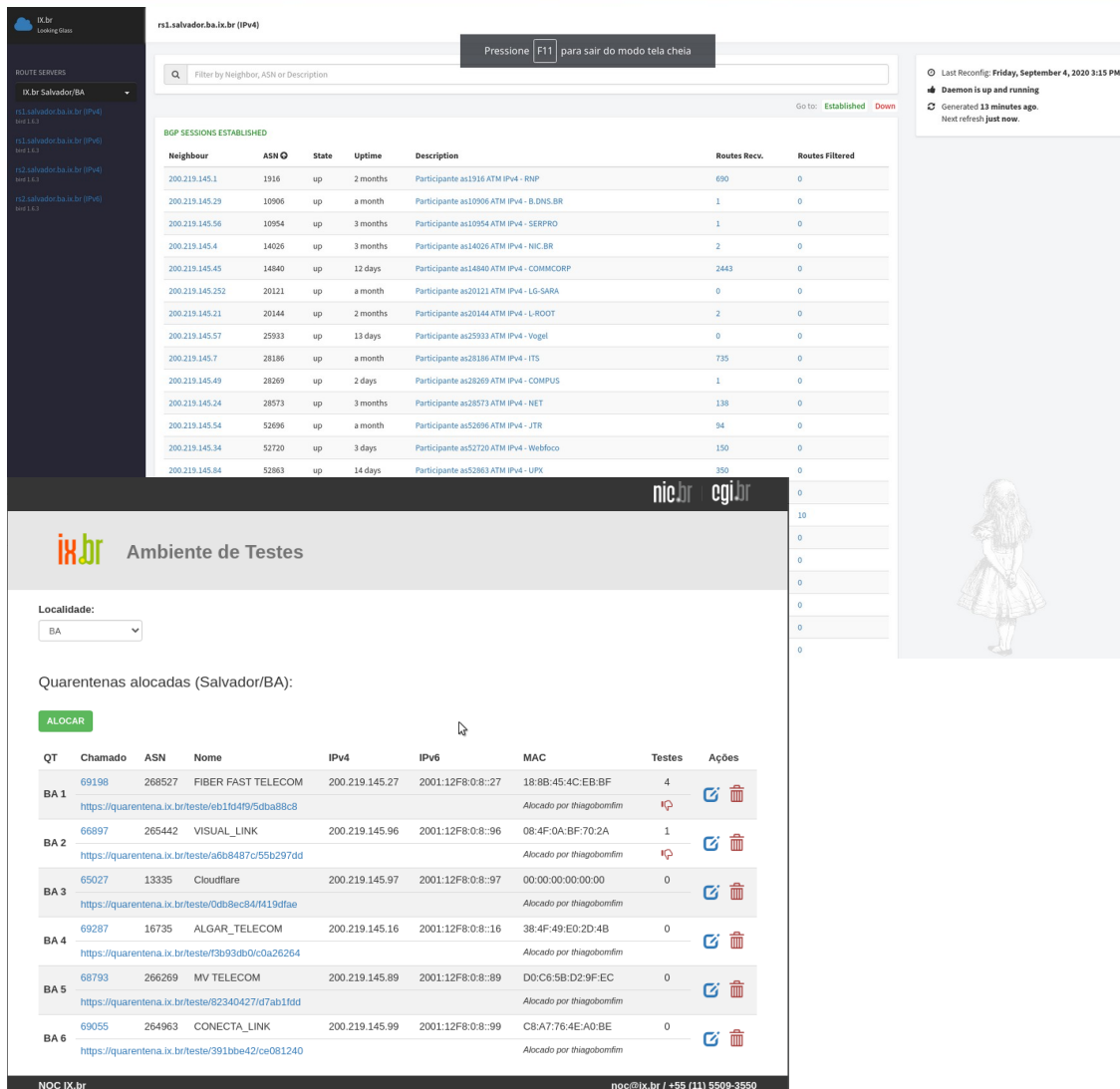


IX.br – Salvador: marcos e perspectivas

- Instalação de novos route-servers:
 - Looking Glass ‘web’: lg.ix.br
- Testes automatizados da quarentena



- Novas CDNs no OpenCDN
 - Globo e Netflix
- PIX central com disponibilidade de interfaces 100G
 - Hoje, temos portas de 1G, 10G e múltiplos agregados;
 - Expectativa ~60 dias;
- Ampliação da capacidade da ligação entre o PIX central e o PIX-COOMCORN;
 - De 20G para 80G (podendo escalar de forma simples);
 - Solução já implementada com o PIX-TASCOM;



rs1.salvador.ba.ix.br (IPv4)

Pressione **F11** para sair do modo tela cheia

Go to: **Established** **Down**

Q Filter by Neighbor, ASN or Description

BGP SESSIONS ESTABLISHED













Neighbour	ASN	State	Uptime	Description	Routes Recv.	Routes Filtered
200.219.145.1	1916	up	2 months	Participante as1916 ATM IPv4 - 8NP	690	0
200.219.145.29	10906	up	a month	Participante as10906 ATM IPv4 - B.DNS.BR	1	0
200.219.145.56	10954	up	3 months	Participante as10954 ATM IPv4 - SERPRO	1	0
200.219.145.4	14026	up	3 months	Participante as14026 ATM IPv4 - NIC.BR	2	0
200.219.145.45	14840	up	12 days	Participante as14840 ATM IPv4 - COMMCORP	2443	0
200.219.145.252	20121	up	a month	Participante as20121 ATM IPv4 - LG-SARA	0	0
200.219.145.21	20144	up	2 months	Participante as20144 ATM IPv4 - L-ROOT	2	0
200.219.145.57	25933	up	13 days	Participante as25933 ATM IPv4 - Vogel	0	0
200.219.145.7	28186	up	a month	Participante as28186 ATM IPv4 - ITS	735	0
200.219.145.49	28269	up	2 days	Participante as28269 ATM IPv4 - COMPUS	1	0
200.219.145.24	28573	up	3 months	Participante as28573 ATM IPv4 - NET	138	0
200.219.145.54	52696	up	a month	Participante as52696 ATM IPv4 - JTR	94	0
200.219.145.34	52720	up	3 days	Participante as52720 ATM IPv4 - Webfoco	150	0
200.219.145.84	52863	up	14 days	Participante as52863 ATM IPv4 - UPX	890	0

ix.br Ambiente de Testes

Localidade: BA

Quarentenas alocadas (Salvador/BA):

ALOCAR

QT	Chamado	ASN	Nome	IPv4	IPv6	MAC	Testes	Ações
BA 1	69198	268527	FIBER FAST TELECOM	200.219.145.27	2001:12F8:0:8::27	18:8B:45:4C:EB:BF	4	 
BA 2	66897	265442	VISUAL_LINK	200.219.145.96	2001:12F8:0:8::96	08:4F:0A:BF:70:2A	1	 
BA 3	65027	13335	Cloudflare	200.219.145.97	2001:12F8:0:8::97	00:00:00:00:00:00	0	 
BA 4	69287	16735	ALGAR_TELECOM	200.219.145.16	2001:12F8:0:8::16	38:4F:49:E0:2D:4B	0	 
BA 5	68793	266269	MV TELECOM	200.219.145.89	2001:12F8:0:8::89	D0:C6:5B:D2:9F:EC	0	 
BA 6	69055	264963	CONECTA_LINK	200.219.145.99	2001:12F8:0:8::99	C8:A7:76:4E:A0:BE	0	 

noc@ix.br / +55 (11) 5509-3550



WTR

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DE TECNOLOGIAS DE REDES DO POP-BA

14 A 18 DE SETEMBRO DE 2020

Obrigado!